

FACT SHEET FOR NPDES PERMIT WA-002462-7

**FACILITY NAME WALLA WALLA
WASTEWATER TREATMENT PLANT**

SUMMARY

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INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System of permits (NPDES permits), which is administered by the Environmental Protection Agency (EPA). The EPA has authorized the State of Washington to administer the NPDES permit program. Chapter 90.48 RCW defines the Department of Ecology's authority and obligations in administering the wastewater discharge permit program.

Washington State law (RCW 90.48.080, 90.48.162 and 90.46) requires that a permit be issued before discharge of wastewater or reclaimed water to waters of the state is allowed. The regulations adopted by the State include procedures for issuing permits (Chapter 173-220 WAC), technical criteria for discharges from municipal wastewater treatment facilities (Chapter 173-221 WAC), water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC), and sediment management standards (Chapter 173-204 WAC). These regulations require that a permit be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least thirty days before the permit is issued (WAC 173-220-050), and standards for reclaimed waters as required by the statute for Reclaimed Water, Ch. 90.46 RCW. They also establish the basis for effluent limitations and other requirements which are to be included in the permit. The fact sheet and draft permit are available for review (see Appendix A--Public Involvement of the fact sheet for more detail on the Public Notice procedures).

The fact sheet and draft permit have been reviewed by the Washington State Department of Health - Office of Drinking Water, Eastern Regional Office, Permittee. Errors and omissions identified in this review have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Comments and the resultant changes to the permit will be summarized in Appendix D--Response to Comments.

<u>GENERAL INFORMATION</u>	
Applicant	City of Walla Walla
Facility Name and Address	Wastewater Treatment Plant 572 Hatch Street Walla Walla, WA 99362
Type of Treatment:	Trickling Filters + Activated Sludge w/duo-media filtration
Discharge Location	Mill Creek (RM 5.4) Latitude: 46° 03' 56" N Longitude: 118° 22' 38" W.
Water Body ID Number	WA-32-1060

BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

History

The City of Walla Walla owns and operates an advanced secondary type domestic wastewater treatment plant, which discharges to Mill Creek. Construction of the existing facility was begun in 1928. Since that time there have been several expansions and/or modifications to the plant. The most recent additions to the plant were identified in the approved May 1997 Facility Plan which proposed a phased approach of design and construction. The phased construction includes headworks, activated sludge with clarifiers, dual sand filtration, ultra violet disinfection with supplemental chlorination/dechlorination, gravity belt thickener, anaerobic digestion, belt filter presses, sludge hauling and land application.

The wastewater treatment process produces an advanced secondary treated effluent that is discharged to the Gose and Blalock (#3) Irrigation Districts or directly to Mill Creek. The discharge to Mill Creek is limited to the winter months (December through April), or when the irrigation districts do not take the water. The irrigation districts have been receiving the city's wastewater effluent since the early 1900's as a result of several agreements and court actions. Gose Irrigation District is entitled to 1.77 cubic feet per second (cfs) or 1.14 mgd (million gallons per day). Blalock Irrigation District's water right is 9.38 cfs or 6.06 mgd.

Collection System Status

Sewage generated in the City is collected and transported to the treatment plant via gravity collection sewers, one lift station, and three pump stations. The system contains approximately 117 miles of publicly owned sewers and 1,300 manholes. The City also owns and maintains a sewer system that serves two large food-processing industries. This sewer system is separate from the public system and is applied on agricultural land for crop irrigation. The system has been constructed over the years from 1929 to the present.

The results of an inflow and infiltration (I/I) analysis showed that summer and winter flows are not appreciably different and, in fact, the summer flows tend to be higher. Screening criteria were used to determine if existing I/I might be considered excessive. The per capita flow for the average non-storm condition during periods of high ground water (summer) is equal to 226 gallons per capita per day (gpcpd). The per capita flow for maximum day condition is equal to 321 gpcpd. Both these values are greater than the screening criteria of 120 and 275 gpcpd, respectively. However, after a cost effectiveness analysis of removal versus treatment it was determined that providing flow equalization and treatment is more cost-effective. The majority of future treatment costs will be needed to improve effluent quality. The year 2015 inflow is projected to be 30 percent greater than the existing peak hydraulic capacity. The current I/I abatement and sewer replacement program was initiated in 1978 after recognition of high flows as a partial source of high treatment cost. Funding for the program has varied from \$200,000 per year during early phases of the program to \$631,000 in 1998, and continues at a rate of approximately \$400,000 per year since 1993.

Treatment Processes

The City of Walla Walla owns, operates, and maintains facilities for the collection, transport, treatment, and disposal of wastewater generated within the wastewater service area. The wastewater treatment plant (WWTP) is located approximately 2 miles west of the city, on a 15-

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acre site. The City maintains two separate systems, one for domestic and commercial waste and one for food processing wastewater originating from two food processing plants. Domestic and food processing wastewaters are conveyed separately to the site by gravity. Food processing wastewater is pumped to a 900-acre spray farm site for irrigation of non-food crops for the majority of the year. When irrigation is not possible because of freezing weather, industrial flow is combined and treated with the domestic wastewater.

The current NPDES wastewater treatment discharge permit imposes a discharge limit of 9.60 mgd during periods when effluent can be discharged to Mill Creek (December 1st to April 30th). For the rest of the year, effluent is discharged to two private irrigation districts west of the city. The WWTP provides advanced secondary treatment. Construction of the existing facility was begun in 1928. The most recent additions to the plant were the addition of a new secondary clarifier in 1990, an upgrade of the laboratory facilities in 1991, the addition of a new influent pump station in 1995, and the major improvements in 2000.

The City is obligated per a 1927 Consent Decree to provide the Blalock and Gose Irrigation Districts with 7.3 MGD of treated wastewater suitable for "irrigation and stock watering purposes." Subsequently, from May 1st to November 30th, the treated effluent from the City's WWTP is discharged directly to the irrigation districts and not discharged to Mill Creek. When necessary, the Irrigators can request that the City provide treated effluent at any time during the year. The irrigation practices within these irrigation districts are unrestricted and open access area and food crop irrigation with treated wastewater occurs. Therefore, the State of Washington Reclaimed Water Standards require the City to meet more stringent effluent limitations for total coliform and turbidity prior to discharge to the irrigation districts. The Reclaimed Water Standards require the discharge to meet the Class A standards for irrigation of food crops or for unrestricted access. The City will use a phased approach in the design and construction of the WWTP upgrades to achieve these reclaimed water standards.

The year 2000 improvements and subsequent phases were necessary to meet water quality requirements for the receiving water and to produce Class A Reclaimed Water by the December 31, 2008. The phased approach includes; replace the existing comminutors with mechanical fine screens, replace the existing gaseous chlorine and sulfur dioxide systems with liquid sodium hypochlorite and sodium bisulfite systems for effluent chlorination and dechlorination, upgrade the existing solids handling facilities for sludge dewatering and add dewatered sludge storage facilities, install a new septage receiving facility, and remodel the existing control building.

Additional phases include construction of two oxidation ditch aeration basins with anaerobic and anoxic selector basins, installation of three secondary clarifiers, installation of diversion boxes and piping to allow discharge of primary clarifier effluent directly to the activated sludge system bypassing the trickling filters, installation of two belt filter presses, and installation of a new standby generator, additional influent mechanical screen (2002), replacement of the chlorination system with ultra violet as the primary disinfection system (2004), upgrades to the dual sand filtration system with coagulation to meet the Class A Water Reclamation and Reuse standards by December 2008.

The Water Reclamation and Reuse Standards require the generator of the reclaimed water to either have an Ecology delegated industrial wastewater treatment program or all industries discharging into the generator's wastewater collection system shall have current waste discharge permits issued by Ecology.

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Discharge Outfall

Advanced secondary treatment with disinfection and Class A Reclaimed Water is discharged from the facility via a 27-inch chlorine contact basin outlet pipe to a distribution box. The distribution box provides direct discharges to the Gose and Blalock Irrigation Districts. The effluent is pipe directly to the Gose Irrigation District and to an outfall lagoon that provides distribution to Mill Creek and also to the Blalock Irrigation District.

Residual Solids

The treatment facilities remove solids during the treatment of the wastewater at the headworks (grit and screenings), and at the trickling filter and activated sludge primary and secondary clarifiers, in addition to incidental solids (rags, scum, and other debris) removed as part of the routine maintenance of the equipment. Grit, rags, scum and screenings are drained and disposed of as solid waste at the local landfill. Solids removed from the primary and secondary clarifiers are thickened, treated (anaerobic digestion), dewatered, and land applied under a permit from the Walla Walla County Health District.

Solids process description: The anaerobic digestion system is maintained for continued operation of the secondary trickling filter and waste activated sludge. The sludge may be co-thickened with the primary sludge in the primary clarifiers, thickened with a gravity belt thickener, or co-thickened with primary sludge with a gravity belt thickener prior to pumping to the anaerobic digesters.. Digested sludge will be dewatered and land applied to dry land wheat fields from May through November. The biosolids will be hauled to the land application site. From December through April, dewatered sludge will be stored on an asphalt paved storage pad.

PERMIT STATUS

The previous permit for this facility was issued on June 10, 2000. The previous permit placed effluent limitations on 5-day Carbonaceous Biochemical Oxygen Demand (CBOD₅), Total Suspended Solids (TSS), pH, Fecal and Total Coliform bacteria, Turbidity, and total Chlorine Residual.

An application for permit renewal was submitted to the Department on December 30, 2004 and accepted by the Department on January 3, 2005.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The facility received its last inspection on September 29, 2004.

During the history of the previous permit, the Permittee has remained in compliance, based on Discharge Monitoring Reports (DMRs) submitted to the Department and inspections conducted by the Department. The City, in fact, has received awards from the Department for continued compliance with permit conditions for the years 2002, 2003, and 2004.

WASTEWATER CHARACTERIZATION

The concentration of pollutants in the discharge was reported in the NPDES application and in discharge monitoring reports (July 1, 2003 to June 30, 2004). The effluent is characterized as follows:

Table 1: Wastewater Characterization

Parameter	Concentration	
	Monthly Average (Lowest)	Monthly Average (Highest)
Flow, MGD	6.31	8.81
pH	6.18	7.59
Temperature (summer) ° C	12.95	16.0
Fecal Coliform, Outfall No. 1	1.10	758.8
Total Coliform, Outfall No. 2	0.50	0.70
BOD, mg/L	2.81	6.0
CBOD, mg/L	2.75	5.9
Chlorine-Total Residual, mg/L	0.00	0.00
TSS, mg/L	0.99	7.4
Ammonia (as NH ₃ -N), mg/L	0.4565	2.0476
Dissolved Oxygen, mg/L	8.99	12.52
Parameter	Maximum Day	
Copper, µg/L	7.3	
Zinc, µg/L	67.0	

SEPA COMPLIANCE

SEPA and NEPA (through the State Environmental Review) were complied with as part of the planning (Facility Plan) document approval process and design and construction funding process.

PROPOSED PERMIT LIMITATIONS

Federal and State regulations require that effluent limitations set forth in a NPDES permit must be either technology- or water quality-based. Technology-based limitations for municipal discharges are set by regulation (40 CFR 133, and Chapters 173-220 and 173-221 WAC). Water quality-based limitations are based upon compliance with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200 WAC), Sediment Quality Standards (Chapter 173-204 WAC) or the National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992.) The most stringent of these types of limits must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

The limits in this permit are based in part on information received in the application. The effluent constituents in the application were evaluated on a technology- and water quality-basis. The limits necessary to meet the rules and regulations of the State of Washington were determined and included in this permit. Ecology does not develop effluent limits for all pollutants that may be reported on the application as present in the effluent. Some pollutants are not treatable at the concentrations reported, are not controllable at the source, are not listed in regulation, and do not have a reasonable potential to cause a water quality violation. Effluent limits are not always developed for pollutants that may be in the discharge but not reported as present in the application. In those circumstances the permit does not authorize discharge of the non-reported pollutants. Effluent discharge conditions may change from the conditions reported in the permit application. If significant changes occur in any constituent, as described in 40 CFR 122.42(a), the Permittee is required to notify the Department of Ecology. The Permittee may be in violation of the permit until the permit is modified to reflect additional discharge of pollutants.

The Reclaimed Water Act, Chapter 90.46 RCW requires that reclaimed water be adequately and reliably treated prior to distribution and beneficial use. State regulations require that limitations set forth in a waste discharge permit issued under Chapter 90.48 RCW must be either technology- or water quality-based. Municipal Wastewater must also be treated using all known, available, and reasonable treatment (AKART) and not pollute the waters of the State. The minimum requirements criteria to demonstrate compliance with the AKART standard these requirements are derived from the *Water Reclamation and Reuse Standards*, the *Design Criteria for Municipal Wastewater Land Treatment*, and Chapter 173-221 WAC.

The more stringent of the water quality-based or technology-based limits are applied to each of the parameters of concern. Each of these types of limits is described in more detail below.

DESIGN CRITERIA

In accordance with WAC 173-220-150 (1)(g), flows or waste loadings shall not exceed approved design criteria.

The design criteria for this treatment facility are taken from May 1997 Facilities Plan prepared by CH2M-Hill Consultants as amended in Addendum No. 1 (January 1998) and are as follows:

Table 2: Design Standards for Walla Walla WWTP.

Parameter	Design Quantity
Monthly average flow (max. month)	9.60 MGD
Maximum Day flow	12.30 MGD
Instantaneous peak flow	20.90 MGD
BOD ₅ influent loading	10,815 lb./day
TSS influent loading	10,815 lb./day
TKN, maximum month:	1,871 lbs/day
Design population equivalent	37,004

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

Municipal wastewater treatment plants are a category of discharger for which technology-based effluent limits have been promulgated by federal and state regulations. These effluent limitations are given in the Code of Federal Regulations (CFR) 40 CFR Part 133 (federal) and in Chapter 173-221 WAC (state). These regulations are performance standards that constitute all known available and reasonable methods of prevention, control, and treatment for municipal wastewater.

The following technology-based limits for pH, fecal coliform, BOD₅, and TSS are taken from Chapter 173-221 WAC are:

Table 3: Technology-based Limits.

Parameter	Limit
pH:	shall be within the range of 6 to 9 standard units.
Fecal Coliform Bacteria	Monthly Geometric Mean = 200 organisms/100 mL Weekly Geometric Mean = 400 organisms/100 mL

Parameter	Limit
BOD ₅ (concentration)	Average Monthly Limit is the most stringent of the following: - 30 mg/L - may not exceed fifteen percent (15%) of the average influent concentration Average Weekly Limit = 45 mg/L
TSS (concentration)	Average Monthly Limit is the most stringent of the following: - 30 mg/L - may not exceed fifteen percent (15%) of the average influent concentration Average Weekly Limit = 45 mg/L Average Monthly Limit = 0.5 mg/L Average Weekly Limit = 0.75 mg/L

The technology-based monthly average limitation for chlorine is derived from standard operating practices. The Water Pollution Control Federation's Chlorination of Wastewater (1976) states that a properly designed and maintained wastewater treatment plant can achieve adequate disinfection if a 0.5 mg/liter chlorine residual is maintained after fifteen minutes of contact time. See also Metcalf and Eddy, Wastewater Engineering, Treatment, Disposal and Reuse, Third Edition, 1991. A treatment plant that provides adequate chlorination contact time can meet the 0.5 mg/liter chlorine limit on a monthly average basis. According to WAC 173-221-030(11)(b), the corresponding weekly average is 0.75 mg/liter.

The existing permit has a monthly average chlorine limit of 4.0 ug/L and a daily maximum limit of 19 ug/L and the facility is able to comply with it. These limits apply when discharging to Mill Creek from December 1 through April 30. Therefore, the lower limit becomes the technology-based limit and must be used to avoid backsliding.

All reclaimed water permits must assure that the effluent has been adequately and reliably treated so that as a result of that treatment, it is suitable for a beneficial use or controlled use that would not otherwise occur and is no longer considered a wastewater (RCW 90.46.010(40)). The authority and duties for reclaimed water use are in addition to those already provided in law with regard to sewage and wastewater collection, treatment and disposal for the protection of public health and the safety of the state's waters.

Water Reclamation and Reuse Standards, 1997

The Standards outline the requirements for the additional level of treatment technology as well as water quality limits necessary for public health protection during the use of reclaimed water. This facility is scheduled to produce Class A reclaimed water by January 1, 2009. Class A is the highest quality of reclaimed water and therefore provides the broadest range of reuse opportunities. Conversely, Class A reclaimed water requires the most stringent treatment and water quality limitations. The technology and water quality requirements for the production of Class A reclaimed water are as follows:

“Class A Reclaimed Water” is reclaimed water that had been adequately and reliably treated and, at a minimum is, at all times, an oxidized, coagulated, filtered and disinfected wastewater.

1. Oxidized is defined as wastewater in which the organic matter has been stabilized such that the biochemical oxygen demand (BOD₅) does not exceed 30 mg/L and total suspended solids (TSS) does not exceed 30 mg/L, is nonputrescible and contains dissolved oxygen.
2. Coagulated wastewater is defined as an oxidized wastewater in which colloidal and finely divided suspended matter have been destabilized and agglomerated prior to filtration by the addition of chemicals or by an equally effective method.
3. Filtered wastewater is defined as an oxidized, coagulated wastewater which has been passed through natural undisturbed soils or filter media, such as sand or anthracite, so that the turbidity as determined by an approved laboratory method does not exceed an average operating turbidity of 2 nephelometric turbidity units (NTU), determined monthly, and does not exceed 5 NTU at any time.
4. Adequate disinfection is defined as the median number of total coliform organisms in the wastewater after disinfection does not exceed 2.2 per 100 milliliters, as determined from the bacteriological results of the last seven (7) days for which analyses have been completed, and the number of total coliform organisms does not exceed 23 per 100 milliliters in any sample.
5. A 0.5 mg/L chlorine residual shall be maintained in the reclaimed water during conveyance from the reclamation facility to the use areas, unless waived by the departments of health and ecology.

Water Reclamation and Reuse

Discharge to Blalock and Gose Irrigation Districts -- The Reclaimed Water Standards require the discharge from the Walla Walla treatment plant to meet Class A standards for irrigation of food crops or for irrigation of lands with unrestricted access. Since the City will use a phased approach in the design and construction of the WWTP upgrades to achieve reclaimed water standards, the Departments of Health and Ecology has required the City to produce Class A Reclaimed Water no later than December 31, 2008. In the interim, the WWTP will be required to meet the existing effluent limitations prior to discharge to the Blalock and Gose Irrigation Districts.

SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that waste discharge permits shall be conditioned such that the discharge will meet established Surface Water Quality Standards. The Washington State Surface Water Quality Standards (Chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the surface waters of the state. Water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin-wide total maximum daily loading study (TMDL).

Numerical Criteria for the Protection of Aquatic Life

"Numerical" water quality criteria are numerical values set forth in the State of Washington's Water Quality Standards for Surface Waters (Chapter 173-201A WAC). They specify the levels of pollutants allowed in a receiving water while remaining protective of aquatic life. Numerical criteria set forth in the Water Quality Standards are used along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limitations, they must be used in a permit.

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Numerical Criteria for the Protection of Human Health

The state was issued 91 numeric water quality criteria for the protection of human health by the U.S. EPA (EPA 1992). These criteria are designed to protect humans from cancer and other disease and are primarily applicable to fish and shellfish consumption and drinking water from surface waters.

Narrative Criteria

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the State of Washington.

Antidegradation

The State of Washington's Antidegradation Policy requires that discharges into a receiving water shall not further degrade the existing water quality of the water body. In cases where the natural conditions of a receiving water are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. Similarly, when receiving waters are of higher quality than the criteria assigned, the existing water quality shall be protected. More information on the State Antidegradation Policy can be obtained by referring to WAC 173-201A-070.

The Department has reviewed existing records and has determined that the ambient water quality is lower than the designated classification criteria given in Chapter 173-201A WAC. The Department has completed a number of water quality studies and developed an ammonia TMDL for Mill Creek, which was approved by EPA. This TMDL is currently being investigated by the City to determine if a continuous year around discharge to Mill Creek is possible. Therefore, the designated classification criteria for this water body will be used in the proposed permit. The discharges authorized by this proposed permit should not cause a loss of beneficial uses.

Critical Conditions

Surface water quality-based limits are derived for the waterbody's critical condition, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or characteristic water body uses.

Mixing Zones

The Water Quality Standards allow the Department of Ecology to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. Both "acute" and "chronic" mixing zones may be authorized for pollutants that can have a toxic effect on the aquatic environment near the point of discharge. The concentration of pollutants at the boundary of these mixing zones may not exceed the numerical criteria for that type of zone. Mixing zones can only be authorized for discharges that are receiving all known, available, and reasonable methods of prevention, control and treatment (AKART) and in accordance with other mixing zone requirements of WAC 173-201A-100.

The National Toxics Rule (EPA, 1992) allows the chronic mixing zone to be used to meet human health criteria.

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Description of the Receiving Water

The facility discharges to Mill Creek which is designated as a Class B receiving water in the vicinity of the outfall. Significant nearby non-point sources of pollutants include a number of stormwater outfalls into Mill Creek throughout the City of Walla Walla. Characteristic uses include the following:

- water supply (industrial, agricultural); stock watering; fish migration; fish rearing, spawning and harvesting; wildlife habitat; secondary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation.
- Water quality of this class shall meet or exceed the requirements for most uses.

Surface Water Quality Criteria

Applicable criteria are defined in Chapter 173-201A WAC for aquatic biota. In addition, U.S. EPA has promulgated human health criteria for toxic pollutants (EPA 1992). Criteria for this discharge are summarized below:

Fecal Coliforms	200 organisms/100 mL maximum geometric mean
Dissolved Oxygen	5 mg/L minimum
Temperature	21 degrees Celsius maximum or incremental increases above background
pH	6.5 to 8.5 standard units
Turbidity	less than 10 NTUs above background
Toxics	No toxics in toxic amounts (see Appendix C for numeric criteria for toxics of concern for this discharge)

Based on studies conducted in 1982 and 1986 by the Department, a total maximum daily load (TMDL) study for ammonia was developed and approved by the U. S. Environmental Protection Agency in 1993. The TMDL for ammonia in Mill Creek is limited to river mile 6.4 (13th Street Bridge in Walla Walla) to the mouth of Mill Creek at the Walla Walla River. The TMDL does not allow the direct discharge of effluent from the Walla Walla wastewater treatment plant into Mill Creek from May 1 through December 1 of each year due to a Wasteload Allocation (WLA) of zero pounds per day of ammonia. Since the City does not directly discharge during this time period, it was assumed that modeling of this period was not necessary.

The Department advised the City of Walla Walla that if they wish to be able to discharge on a year around basis into Mill Creek, they need to revise the existing TMDL and wasteload allocation. The City would have to demonstrate that year around discharge of waste water to Mill Creek will not result in a violation of water quality standards or impairment of beneficial uses. Since April 1997, the City has undertaken this study to gather data, develop a model, and prepare a report to be used by the Department to revise the existing TMDL. A draft copy of the amended TMDL was received by the Department on February 2, 1998. The Department's Environmental Assessment Program responded to this draft of the TMDL in February 1998 and is currently waiting for response.

When the City has completed the investigation and modeling of the discharge of ammonia to Mill Creek, the report shall be submitted to the Department for review. The Department shall review the data, information and model presented in the TMDL report and work with the Permittee to address any outstanding issues. After the final TMDL report is completed and accepted by the Department, the results and recommendations in the TMDL report for discharge of ammonia to Mill Creek will be submitted to EPA for approval. If and when EPA approves the ammonia TMDL report, the Department will reopen

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NPDES Permit No. WA-002462-7 and modify the permit to include appropriate language and effluent limitations for discharge of ammonia to Mill Creek between May 1st through November 30th of each year. The permit will be subject to the normal Factual (15-days) and Public (30-days) review process prior to final issuance. Upon request by the Permittee, the final ammonia effluent limits may be revised following the Department's adoption of EPA's ammonia criteria and/or EPA's approval of the revised ammonia TMDL for Mill Creek.

On March 13, 1992, the Department of Ecology submitted a residual chlorine TMDL for Mill Creek to EPA. This TMDL was established to control residual chlorine in Mill Creek downstream of the Walla Walla WWTP, the sole source of chlorine residual. EPA's initial review questioned whether or not the water quality standards for residual chlorine could be met considering actual low flow conditions and the dilution needed to meet the water quality standard. However, since the initial study, Walla Walla has installed de-chlorination equipment, which if operated properly should eliminate the residual chlorine problem.

Consideration of Surface Water Quality-Based Limits for Numeric Criteria

Pollutant concentrations in the proposed discharge exceed water quality criteria with technology-based controls which the Department has determined to be AKART. A mixing zone is authorized in accordance with the geometric configuration, flow restriction, and other restrictions for mixing zones in Chapter 173-201A WAC and are defined as follows:

The maximum size of the chronic mixing zone shall comply with the following:

- (i) Not extend in a downstream direction for a distance from the discharge port(s) greater than three hundred feet plus the depth of water over the discharge port(s), or extend upstream for a distance of over one hundred feet;
- (ii) Not utilize greater than twenty-five percent of the flow; and
- (iii) Not occupy greater than twenty-five percent of the width of the water body.

The maximum size of the acute mixing zone shall comply with the most stringent combination of the following:

- (i) Not extend beyond ten percent of the distance towards the upstream and downstream boundaries of an authorized mixing zone, as measured independently from the discharge port(s);
- (ii) Not utilize greater than two and one-half percent of the flow; and
- (iii) Not occupy greater than twenty-five percent of the width of the water body.

Discharge to Mill Creek (December 1st through April 30) -- The dilution factors of effluent to receiving water that occur within these zones have been determined at the critical condition using the 25% and 2.5% of the 7Q10 flows of 6.6 cfs. The dilution factors have been determined: Acute = 1.01 and Chronic = 1.12.

Pollutants in an effluent may affect the aquatic environment near the point of discharge (near field) or at a considerable distance from the point of discharge (far field). Toxic pollutants, for example, are near-field pollutants--their adverse effects diminish rapidly with mixing in the receiving water. Conversely, a pollutant such as BOD is a far-field pollutant whose adverse effect occurs away from the discharge even after dilution has occurred. Thus, the method of calculating water quality-based effluent limits varies with the point at which the pollutant has its maximum effect.

The derivation of water quality-based limits also takes into account the variability of the pollutant concentrations in both the effluent and the receiving water.

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The critical condition for Mill Creek is the seven-day average low river flow with a recurrence interval of ten years (7Q10). Ambient data at critical conditions in the vicinity of the WWTP outfall was taken from the TMDL study which considered both historical data and an intensive monitoring study conducted in 1982 and 1987 and ambient monitoring data from five sampling dates in late 1992 and early 1993. The ambient background data used for this permit is from the approved 1993 TMDL report.

BOD₅--Under critical conditions there was a prediction of a violation of the dissolved oxygen criterion for the receiving water. A CBOD₅ effluent limit of 15 mg/L was found to be protective of the dissolved oxygen criterion and therefore was imposed instead of the technology-based limitation.

The impact of CBOD on the receiving water was modeled using the Streeter Phelps model, at critical condition and with the technology-based effluent limitation for CBOD₅ described under "Technology-Based Effluent Limitations" above. The existing treatment plant CBOD₅ and TSS effluent concentrations for the past twenty-four months were analyzed to determine "effluent concentration consistently achievable through proper operation and maintenance". This analysis showed that the WWTP will achieve CBOD₅ and TSS monthly average effluent concentration of 3.2 and 1.2 mg/L, respectively. The calculations used to determine dissolved oxygen impacts are shown in Appendix C.

Temperature and pH--The impact of pH and temperature were modeled using the calculations from EPA, 1988. The input variables were dilution factor 1.12, upstream temperature 10.7 °C, upstream pH 7.83, upstream alkalinity 30 (as mg CaCO₃/L – hardness 26.4), effluent temperature 17 °C, effluent pH of 6, effluent pH of 9, and effluent alkalinity 80 (as mg CaCO₃/L).

Under critical conditions there is no predicted violation of the Water Quality Standards for Surface Waters. Therefore, the technology-based effluent limitations for pH was placed in the permit and temperature was not limited.

Fecal coliform--The numbers of fecal coliform were modeled by simple mixing analysis using the technology-based limit of 400 organisms per 100 ml and a dilution factor of 1.12.

Under critical conditions there is no predicted violation of the Water Quality Standards for Surface Waters with the technology-based limit. Therefore, the technology-based effluent limitation for fecal coliform bacteria was placed in the proposed permit.

Toxic Pollutants--Federal regulations (40 CFR 122.44) require NPDES permits to contain effluent limits for toxic chemicals in an effluent whenever there is a reasonable potential for those chemicals to exceed the surface water quality criteria. This process occurs concurrently with the derivation of technology-based effluent limits. Facilities with technology-based effluent limits defined in regulation are not exempted from meeting the Water Quality Standards for Surface Waters or from having surface water quality-based effluent limits.

The following toxics were determined to be present in the discharge, copper, lead, mercury, silver, and zinc. A reasonable potential analysis (See Appendix C) was conducted on these parameters to determine whether or not effluent limitations would be required in this permit.

The determination of the reasonable potential for chlorine, ammonia, copper, lead, mercury, silver, and zinc to exceed the water quality criteria was evaluated with procedures given in EPA, 1991 (Appendix C) at the critical condition. The critical condition in this case occurs December 1 through April 30 of each year. The parameters used in the critical condition modeling are as follows: acute dilution factor 1.01, chronic dilution factor 1.12, receiving water temperature 10.7 °C, receiving water alkalinity 30 (as mg CaCO₃/L), receiving water and WWTP hardness at 21.4 and 58, respectively, and combined at 58 for Acute and 54 for Chronic (as mg CaCO₃/L) based on additional clean sampling since the previous permit.

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Valid ambient background data was available for, lead, mercury, silver. Calculations using all applicable data resulted in a determination that there is no reasonable potential for this discharge to cause a violation of water quality standards. This determination assumes that the Permittee meets the other effluent limits of this permit.

Effluent limits were derived for ammonia, copper, and zinc, which were determined to have a reasonable potential to cause a violation of the Water Quality Standards. The Permittee has made significant changes to the wastewater treatment process and operational and maintenance processes that have reduced the discharge of total ammonia in the effluent. An analysis of this effluent data has shown that there is no longer a reasonable potential for violation of water quality limits for ammonia. Previous metals effluent limitations were calculated using methods from EPA, 1991 and were determined using the Department's TSDCALC09 spreadsheet. However, Ecology has up-dated the spreadsheet. See Appendix C for the revised spreadsheet (TSDCALC11) and the following table for copper and zinc effluent limits.

The resultant effluent limits are as follows:

FINAL METALS EFFLUENT LIMITATIONS				
	Average Monthly		Maximum Daily	
Parameter	Previous Permit	Final Limits	Previous Permit	Final Limits
Copper	6.34 µg/L	7.07 µg/L	8.85 µg/L	10.31 µg/L
Zinc	54.94 µg/L	50.11 µg/L	73.02 µg/L	73.10 µg/L

Water quality criteria for metals in Chapter 173-201A WAC are based on the dissolved fraction of the metal.

The Permittee may provide data clearly demonstrating the seasonal partitioning of the dissolved metal in the ambient water in relation to an effluent discharge. Metals criteria may be adjusted on a site-specific basis when data is available clearly demonstrating the seasonal partitioning in the ambient water in relation to an effluent discharge.

Metals criteria may also be adjusted using the water effects ratio approach established by USEPA, as generally guided by the procedures in USEPA Water Quality Standards Handbook, December 1983, as supplemented or replaced.

Whole Effluent Toxicity

The Water Quality Standards for Surface Waters require that the effluent not cause toxic effects in the receiving waters. Many toxic pollutants cannot be detected by commonly available detection methods. However, toxicity can be measured directly by exposing living organisms to the wastewater in laboratory tests and measuring the response of the organisms. Toxicity tests measure the aggregate toxicity of the whole effluent, and therefore this approach is called whole effluent toxicity (WET) testing. Some WET tests measure acute toxicity and other WET tests measure chronic toxicity.

Acute toxicity tests measure mortality as the significant response to the toxicity of the effluent. Dischargers who monitor their wastewater with acute toxicity tests are providing an indication of the potential lethal effect of the effluent to organisms in the receiving environment.

Chronic toxicity tests measure various sublethal toxic responses such as retarded growth or reduced reproduction. Chronic toxicity tests often involve either a complete life cycle test of an organism with an extremely short life cycle or a partial life cycle test on a critical stage of one of a test organism's life cycles. Organism survival is also measured in some chronic toxicity tests.

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Accredited WET testing laboratories have the proper WET testing protocols, data requirements, and reporting format. Accredited laboratories are knowledgeable about WET testing and capable of calculating an NOEC, LC₅₀, EC₅₀, IC₂₅, etc. All accredited labs have been provided the most recent version of the Department of Ecology Publication # WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria* which is referenced in the permit. Any Permittee interested in receiving a copy of this publication may call the Ecology Publications Distribution Center 360-407-7472 for a copy. Ecology recommends that Permittees send a copy of the acute or chronic toxicity sections(s) of their permits to their laboratory of choice.

The WET tests during effluent characterization indicate that no reasonable potential exists to cause receiving water acute toxicity, and the Permittee will not be given an acute WET limit and will only be required to retest the effluent prior to application for permit renewal in order to demonstrate that acute toxicity has not increased in the effluent.

If the Permittee makes process or material changes which, in the Department's opinion, results in an increased potential for effluent toxicity, then the Department may require additional effluent characterization in a regulatory order, by permit modification, or in the permit renewal. Toxicity is assumed to have increased if WET testing conducted for submission with a permit application fails to meet the performance standards in WAC 173-205-020, "whole effluent toxicity performance standard". The Permittee may demonstrate to the Department that changes have not increased effluent toxicity by performing additional WET testing after the time the process or material changes have been made.

The WET tests during effluent characterization indicate that no reasonable potential exists to cause receiving water chronic toxicity, and the Permittee will not be given a chronic WET limit and will only be required to retest the effluent prior to application for permit renewal in order to demonstrate that chronic toxicity has not increased in the effluent.

If the Permittee makes process or material changes which, in the Department's opinion, results in an increased potential for effluent toxicity, then the Department may require additional effluent characterization in a regulatory order, by permit modification, or in the permit renewal. Toxicity is assumed to have increased if WET testing conducted for submission with a permit application fails to meet the performance standards in WAC 173-205-020, "whole effluent toxicity performance standard". The Permittee may demonstrate to the Department that changes have not increased effluent toxicity by performing additional WET testing after the time the process or material changes have been made.

Human Health

Washington's water quality standards now include 91 numeric health-based criteria that must be considered in NPDES permits. These criteria were promulgated for the state by the U.S. EPA in its National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992).

The Department has determined that the applicant's discharge is undergoing technology-based upgrades based on a Department permit, and thus should be regulated for human health based criteria only after upgrades are completed. The discharge will be re-evaluated for impacts to human health at the next permit reissuance.

	Acute	Chronic
Human Health, Carcinogen*		6.65

*Harmonic Mean Flow = 69 cfs, Annual Average Effluent Flow =7.9 MGD

Sediment Quality

The Department has promulgated aquatic sediment standards (Chapter 173-204 WAC) to protect aquatic biota and human health. These standards state that the Department may require Permittees to evaluate the potential for the discharge to cause a violation of applicable standards (WAC 173-204-400).

The Department has determined through a review of the discharger characteristics and effluent characteristics that this discharge has no reasonable potential to violate the Sediment Management Standards.

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and the effluent limitations are being achieved.

Monitoring for total metals is being required to further characterize the effluent. These pollutants could have a significant impact on the quality of the surface water.

Monitoring of sludge quantity and quality is necessary to determine the appropriate uses of the sludge. Sludge monitoring is required by the current state and local solid waste management program and also by EPA under 40 CFR 503.

The monitoring schedule is detailed in the proposed permit under Condition S.2. Specified monitoring frequencies take into account the quantity and variability of discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring. The required monitoring frequency is consistent with agency guidance given in the current version of Ecology's *Permit Writer's Manual* (July 1994) for an activated sludge plant in excess of 5.0 MGD Average Design Flow. Procedures and testing schedules for field verification and calibration of the turbidimeter (nephelometer) as per Standard Methods for Analysis of Water and Wastewater, Section 2130 Turbidity.

Additional monitoring is required in order to further characterize the effluent. These monitored pollutants could have a significant impact on the quality of the surface water. Procedures and testing schedules for field verification and calibration of the turbidimeter (nephelometer) as per Standard Methods for Analysis of Water and Wastewater, Section 2130 Turbidity.

As a pretreatment POTW, the City of Walla Walla is required to have influent, primary clarifier effluent, final effluent, and sludge sampled for toxic pollutants in order to characterize the industrial input. Sampling is also done to determine if pollutants interfere with the treatment process or pass through the plant to the sludge or the receiving water. The monitoring data will be used by the City of Walla Walla to develop local limits which commercial and industrial users must meet.

RECLAIMED WATER MONITORING

The monitoring and testing schedule is detailed in the proposed permit under Condition R2. Specified monitoring frequencies take into account the quantity and variability of the reclaimed water discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

Monitoring for TKN, Total Nitrogen, and ammonia is being required to further characterize the effluent reclaimed water. These pollutants could have a significant impact on the quality of the receiving water.

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EFFLUENT LIMITS BELOW QUANTITATION

The water quality-based effluent limit for PCB in the wastewater is below the capability of current analytical technology to quantify. The Quantitation Level is the level at which concentrations can be reliably reported with a specified level of error. For maximum daily effluent limits, if the measured effluent concentration is below the Quantitation Level, the Permittee reports NQ for non-quantifiable. For average monthly effluent limits, all effluent concentrations below the Quantitation Level but above the Method Detection Level are used as reported for calculating the average monthly value.

EFFLUENT LIMITS BELOW DETECTION

The water quality-based effluent limit for PCB in the wastewater is below the capability of current analytical technology to detect. The Method Detection Level (MDL) is the minimum concentration of an analyte that can be measured and reported with a 99 percent confidence that its concentration is greater than zero as determined by a specific laboratory method. For maximum daily limits, if the concentrations are below the MDL the Permittee reports ND for non-detectable. For average monthly limits, all values above the MDL are used as reported and all values below the MDL are calculated as zero.

LAB ACCREDITATION

With the exception of certain parameters the permit requires all monitoring data to be prepared by a laboratory registered or accredited under the provisions of Chapter 173-50 WAC, *Accreditation of Environmental Laboratories*. The laboratory at this facility is accredited for (list parameters):

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

The conditions of S3. are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control the distribution or use of inadequately treated wastewater (Chapter 90.46 and WAC 173-220-210).

RECLAIMED WATER DISTRIBUTION AND REUSE (R4)

These permit requirements are based on the Water Reclamation and Reuse Standards authorized in Chapter 90.46 RCW. The standards contain requirements to assure that distribution and use of reclaimed water are protective of public health and the environment at all times. These include prohibitions on bypass, alarms and storage or alternative disposal of substandard water, maintenance of operational records, cross connection control, use area restrictions and enforceable contracts and a local reclaimed water use ordinance.

OPERATIONS AND MAINTENANCE (R5)

The proposed permit contains condition R.5. as authorized under the Water Reclamation and Reuse Standards and RCW 90.48.110, WAC 173-220-150, Chapter 173-230 WAC, and WAC 173-240-080. It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture, treatment and protection of public health and the environment.

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PREVENTION OF FACILITY OVERLOADING

Overloading of the treatment plant is a violation of the terms and conditions of the permit. To prevent this from occurring, RCW 90.48.110 and WAC 173-220-150 require the Permittee to take the actions detailed in proposed permit requirement S.4. to plan expansions or modifications before existing capacity is reached and to report and correct conditions that could result in new or increased discharges of pollutants. Condition S.4. restricts the amount of flow.

OPERATION AND MAINTENANCE (O&M)

The proposed permit contains condition S.5. as authorized under RCW 90.48.110, WAC 173-220-150, Chapter 173-230 WAC, and WAC 173-240-080. It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture and treatment.

RESIDUAL SOLIDS HANDLING

To prevent water quality problems the Permittee is required in permit condition S7. to store and handle all residual solids (grit, screenings, scum, sludge, and other solid waste) in accordance with the requirements of RCW 90.48.080 and State Water Quality Standards.

Dewatered and anaerobically digested or lime stabilized biosolids will be land applied to dry land wheat from May through November on City owned land north of the treatment plant site. The biosolids will be loaded into a sludge truck and hauled to the land application site. From December through April, dewatered and stabilized biosolids will be stored on an asphalt paved storage pad. The final use and disposal of sewage sludge from this facility is regulated by U.S. EPA under 40 CFR 503, and by Ecology under Chapter 70.95J RCW and Chapter 173-308 WAC. The disposal of other solid waste is under the jurisdiction of the Walla Walla County Health District.

Requirements for monitoring sewage sludge and recordkeeping are included in this permit. This information will be used by Ecology to develop or update local limits and is also required under 40 CFR 503.

PRETREATMENT

To provide more direct and effective control of pollutants discharged to the sanitary sewer, the Permittee is required under 40 CFR Part 403 to develop a pretreatment program to detect and enforce against violations of categorical pretreatment standards promulgated under the federal Clean Water Act.

An industrial user survey is required to determine the extent of compliance of all industrial users of the sanitary sewer and wastewater treatment facility with federal pretreatment regulations (40 CFR Part 403 and Sections 307(b) and 308 of the Clean Water Act), with state regulations (Chapter 90.48 RCW and Chapter 173-216 WAC), and with local ordinances.

As sufficient data becomes available, the Permittee shall, in consultation with the Department, reevaluate its local limits in order to prevent pass through or interference. Upon determination by the Department that any pollutant present causes pass through or interference, or exceeds established sludge standards, the Permittee shall establish new local limits or revise existing local limits as required by 40 CFR 403.5. In addition, the Department may require revision or establishment of local limits for any pollutant that causes an exceedance of the Water Quality Standards or established effluent limits, or that causes whole effluent toxicity. The determination by the Department shall be in the form of an Administrative Order. In order to develop these local limits, the Department will provide environmental criteria or limits for the various pollutants of concern.

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The Department may modify this permit to incorporate additional requirements relating to the establishment and enforcement of local limits for pollutants of concern. Any permit modification is subject to formal due process procedures pursuant to state and federal law and regulation.

Federal and State Pretreatment Program Requirements

Under the terms of the addendum to the "Memorandum of Understanding between Washington Department of Ecology and the United States Environmental Protection Agency, Region 10" (1986), the Department of Ecology (Department) has been delegated authority to administer the Pretreatment Program (i.e. act as the Approval Authority for oversight of delegated Publicly Owned Treatment Works (POTWs)). Under this delegation of authority, the Department has exercised the option of issuing wastewater discharge permits for significant industrial users discharging to POTWs which have not been delegated authority to issue wastewater discharge permits.

There are a number of functions required by the Pretreatment Program which the Department is delegating to such POTWs because they are in a better position to implement the requirements (e.g. tracking the number and general nature of industrial dischargers to the sewerage system). The requirements for a Pretreatment Program are contained in Title 40, part 403 of the Code of Federal Regulations. Under the requirements of the Pretreatment Program (40 CFR 403.8(f)(1)(iii)), the Department is required to approve, condition, or deny new discharges or a significant increase in the discharge for existing significant industrial users (SIUs) (40 CFR 403.8 (f)(1)(i)).

The Department is responsible for issuing State Waste Discharge Permits to SIUs and other industrial users of the Permittee's sewer system. Industrial dischargers must obtain these permits from the Department prior to the Permittee accepting the discharge (WAC 173-216-110(5)) (Industries discharging wastewater that is similar in character to domestic wastewater are not required to obtain a permit. Such dischargers should contact the Department to determine if a permit is required.). Industrial dischargers need to apply for a State Waste Discharge Permit sixty days prior to commencing discharge. The conditions contained in the permits will include any applicable conditions for categorical discharges, loading limitations included in contracts with the POTW, and other conditions necessary to assure compliance with State water quality standards and biosolids standards.

The Department requires this POTW to fulfill some of the functions required for the Pretreatment Program in the NPDES permit (e.g. tracking the number and general nature of industrial dischargers to the sewage system). The POTW's NPDES permit will require that all SIUs currently discharging to the POTW be identified and notified of the requirement to apply for a wastewater discharge permit from the Department. None of the obligations imposed on the POTW relieve an industrial or commercial discharger of its primary responsibility for obtaining a wastewater discharge permit (if required), including submittal of engineering reports prior to construction or modification of facilities (40 CFR 403.12(j) and WAC 173-216-070 and WAC 173-240-110, et seq.).

Wastewater Permit Required

RCW 90.48 and WAC 173-216-040 require SIUs to obtain a permit prior to discharge of industrial waste to the Permittee's sewerage system. This provision prohibits the POTW from accepting industrial wastewater from any such dischargers without authorization from the Department.

Requirements for Routine Identification and Reporting of Industrial Users

The NPDES permit requires non-delegated POTWs to "take continuous, routine measures to identify all existing, new, and proposed SIUs and potential significant industrial users (PSIUs) discharging to the Permittee's sewerage system". Examples of such routine measures include regular review of business tax

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licenses for existing businesses and review of water billing records and existing connection authorization records. System maintenance personnel can also be diligent during performance of their jobs in identifying and reporting as-yet unidentified industrial dischargers. Local newspapers, telephone directories, and word-of-mouth can also be important sources of information regarding new or existing discharges. The POTW is required to notify an industrial discharger, in writing, of their responsibilities regarding application for a State waste discharge permit and to send a copy of the written notification to the Department. The Department will then take steps to solicit a State waste discharge permit application.

Requirements for Performing an Industrial User Survey

This POTW has the potential to serve significant industrial or commercial users and is required to perform an Industrial User Survey. The goal of this survey is to develop a list of SIUs and PSIUs, and of equal importance, to provide sufficient information about industries which discharge to the POTW, to determine which of them require issuance of State waste discharge permits or other regulatory controls. An Industrial User Survey is an important part of the regulatory process used to prevent interference with treatment processes at the POTW and to prevent the exceedance of water quality standards. The Industrial User Survey also can be used to contribute to the maintenance of sludge quality, so that sludge can be a useful biosolids product rather than an expensive waste problem. An Industrial User Survey is a rigorous method for identifying existing, new, and proposed significant industrial users and potential significant industrial users. A complete listing of methodologies is available in the Department of Ecology guidance document entitled "Conducting an Industrial User Survey".

Duty to Enforce Discharge Prohibitions

This provision prohibits the POTW from authorizing or permitting an industrial discharger to discharge certain types of waste into the sanitary sewer. The first portion of the provision prohibits acceptance of pollutants which cause pass through or interference. The definitions of pass through and interference are in Appendix B of the fact sheet..

The second portion of this provision prohibits the POTW from accepting certain specific types of wastes, namely those which are explosive, flammable, excessively acidic, basic, otherwise corrosive, or obstructive to the system. In addition wastes with excessive BOD, petroleum based oils, or which result in toxic gases are prohibited to be discharged. The regulatory basis for these prohibitions is 40 CFR Part 403, with the exception of the pH provisions which are based on WAC 173-216-060.

The third portion of this provision prohibits certain types of discharges unless the POTW receives prior authorization from the Department. The discharges include cooling water in significant volumes, stormwater and other direct inflow sources, and wastewaters significantly affecting system hydraulic loading, which do not require treatment.

Support by the Department for Developing Partial Pretreatment Program by POTW

The Department has committed to providing technical and legal assistance to the Permittee in fulfilling these joint obligations, in particular assistance with developing an adequate sewer use ordinance, notification procedures, enforcement guidelines, and developing local limits and inspection procedures.

SPILL PLAN

The Department has determined that the Permittee stores a quantity of chemicals that have the potential to cause water pollution if accidentally released. The Department has the authority to require the Permittee to develop best management plans to prevent this accidental release under section 402(a)(1) of the Federal Water Pollution Control Act (FWPCA) and RCW 90.48.080.

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The proposed permit requires the Permittee to develop and implement a plan for preventing the accidental release of pollutants to state waters and for minimizing damages if such a spill occurs.

The Permittee has developed a plan for preventing the accidental release of pollutants to state waters and for minimizing damages if such a spill occurs. The proposed permit requires the Permittee to update this plan and submit it to the Department.

GENERAL CONDITIONS

General Conditions are based directly on state and federal law and regulations and have been standardized for all individual municipal NPDES permits issued by the Department.

PERMIT ISSUANCE PROCEDURES

PERMIT MODIFICATIONS

The Department may modify this permit to impose numerical limitations, if necessary to meet Water Quality Standards, Sediment Quality Standards, or Ground Water Standards, based on new information obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The Department may also modify this permit as a result of new or amended state or federal regulations.

PERMIT REOPENER – WALLA WALLA RIVER WATERSHED TMDL STUDY

See Special Condition S1.D in the permit. The department will complete the Walla Walla River Watershed Total Maximum Daily Load studies (TMDLs) and submit the document to the Environmental Protection Agency (EPA) for review and approval. After approval by EPA, the documents will be used by the department to develop a Detailed Implementation Plan (DIP). The guidance and schedules in the DIP will be used to develop language and waste load allocations in an amended fact sheet and permit (WA-002065-6). The Department will then reopen and modify the permit to include appropriate language and waste load allocations for discharge to Mill Creek. The permit will be subject to normal factual and public review process prior to final issuance.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to protect human health, aquatic life, and the beneficial uses of waters of the State of Washington. The Department proposes that this permit be issued for five years.

REFERENCES FOR TEXT AND APPENDICES

Environmental Protection Agency (EPA)

- 1992. National Toxics Rule. Federal Register, V. 57, No. 246, Tuesday, December 22, 1992.
- 1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001.
- 1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington, D.C.
- 1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water. EPA/600/6-85/002a.
- 1983. Water Quality Standards Handbook. USEPA Office of Water, Washington, D.C.

Metcalf and Eddy.

- 1991. Wastewater Engineering, Treatment, Disposal, and Reuse. Third Edition.

Tsivoglou, E.C., and J.R. Wallace.

- 1972. Characterization of Stream Reaeration Capacity. EPA-R3-72-012. (Cited in EPA 1985 op.cit.)

Washington State Department of Ecology.

Laws and Regulations(<http://www.ecy.wa.gov/laws-rules/index.html>)

Permit and Wastewater Related Information
(<http://www.ecy.wa.gov/programs/wq/wastewater/index.html>)

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- 1994. Permit Writer's Manual. Publication Number 92-109

Washington State Department of Ecology,

- 1993. Guidelines for Preparation of Engineering Reports for Industrial Wastewater Land Application Systems, Ecology Publication # 93-36. 20 pp.

Washington State Department of Ecology and Department of Health,

- 1997. Water Reclamation and Reuse Standards, Ecology Publication # 97-23. 73 pp.

Washington State Department of Ecology

- 1998. Chapter E-1, Criteria For Sewage Works Design, Ecology Publication # 98-37. 50 pp

Washington State Department of Ecology,

- 1996. Implementation Guidance for the Ground Water Quality Standards, Ecology Publication # 96-02.

Washington State Department of Health,

- 1994. Design Criteria for Municipal Wastewater Land Treatment, 10 pp

Water Pollution Control Federation.

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1976. Chlorination of Wastewater.

Wright, R.M., and A.J. McDonnell.

1979. In-stream Deoxygenation Rate Prediction. Journal Environmental Engineering Division, ASCE. 105(E2). (Cited in EPA 1985 op.cit.)

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

The Department will publish a Public Notice of Draft (PNOD) on April 22, 2005, in the Walla Walla Union Bulletin to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Water Quality Permit Coordinator
Department of Ecology
Eastern Regional Office
4601 North Monroe Street, Suite 202
Spokane, WA 99205-1295.

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the thirty (30) day comment period to the address above. The request for a hearing shall indicate the interest of the party and the reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least thirty (30) days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing (WAC 173-220-100).

Comments should reference specific text followed by proposed modification or concern when possible. Comments may address technical issues, accuracy and completeness of information, the scope of the facility's proposed coverage, adequacy of environmental protection, permit conditions, or any other concern that would result from issuance of this permit.

The Department will consider all comments received within thirty (30) days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, (509) 329-3537, or by writing to the address listed above.

This permit and fact sheet were written by Jerry Anderson.

APPENDIX B--GLOSSARY

Acute Toxicity--The lethal effect of a pollutant on an organism that occurs within a short period of time, usually 48 to 96 hours.

AKART-- An acronym for "all known, available, and reasonable methods of prevention, control, and treatment".

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation --The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month (except in the case of fecal coliform). The daily discharge is calculated as the average measurement of the pollutant over the day.

Average Weekly Discharge Limitation -- The highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week. The daily discharge is calculated as the average measurement of the pollutant over the day.

Beneficial Use – The use of reclaimed water, that has been transported from the point of production to the point of use without an intervening discharge to the waters of the state, for a beneficial purpose.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD₅--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD₅ is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of a treatment facility.

CBOD₅ – The quantity of oxygen utilized by a mixed population of microorganisms acting on the nutrients in the sample in an aerobic oxidation for five days at a controlled temperature of 20 degrees Celcius, with an inhibitory agent added to prevent the oxidation of nitrogen compounds. The method for determining CBOD₅ is given in 40 CFR Part 136.

Chlorine--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Chronic Toxicity--The effect of a pollutant on an organism over a relatively long time, often 1/10 of an organism's lifespan or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

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Clean Water Act (CWA)--The Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

Combined Sewer Overflow (CSO)--The event during which excess combined sewage flow caused by inflow is discharged from a combined sewer, rather than conveyed to the sewage treatment plant because either the capacity of the treatment plant or the combined sewer is exceeded.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the percent removal requirement. Additional sampling may be conducted.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing a minimum of four discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots).

Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Continuous Monitoring --Uninterrupted, unless otherwise noted in the permit.

Critical Condition--The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.

Dilution Factor--A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the effluent fraction e.g., a dilution factor of 10 means the effluent comprises 10% by volume and the receiving water 90%.

Engineering Report--A document which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab Sample--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial User-- A discharger of wastewater to the sanitary sewer which is not sanitary wastewater or is not equivalent to sanitary wastewater in character.

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Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Infiltration and Inflow (I/I)--"Infiltration" means the addition of ground water into a sewer through joints, the sewer pipe material, cracks, and other defects. "Inflow" means the addition of precipitation-caused drainage from roof drains, yard drains, basement drains, street catch basins, etc., into a sewer.

Interference -- A discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal and;

Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), sludge regulations appearing in 40 CFR Part 507, the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

Major Facility--A facility discharging to surface water with an EPA rating score of > 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Maximum Daily Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL)--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

Minor Facility--A facility discharging to surface water with an EPA rating score of < 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Mixing Zone--A volume that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows procedures outlined in State regulations (Chapter 173-201A WAC).

National Pollutant Discharge Elimination System (NPDES)--The NPDES (Section 402 of the Clean Water Act) is the Federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the State of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/State permits issued under both State and Federal laws.

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Pass through -- A discharge which exits the POTW into waters of the-State in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation), or which is a cause of a violation of State water quality standards.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Potential Significant Industrial User--A potential significant industrial user is defined as an Industrial User which does not meet the criteria for a Significant Industrial User, but which discharges wastewater meeting one or more of the following criteria:

- a. Exceeds 0.5 % of treatment plant design capacity criteria and discharges <25,000 gallons per day or;
- b. Is a member of a group of similar industrial users which, taken together, have the potential to cause pass through or interference at the POTW (e.g. facilities which develop photographic film or paper, and car washes).

The Department may determine that a discharger initially classified as a potential significant industrial user should be managed as a significant industrial user.

Reclaimed Water – Effluent derived in any part from sewage from a wastewater treatment system that has been adequately and reliably treated, so that as a result of that treatment, it is suitable for a beneficial use or a controlled use that would not otherwise occur and is no longer considered wastewater.

Sample Maximum -- No sample shall exceed this value.

Quantitation Level (QL)-- A calculated value five times the MDL (method detection level).

Significant Industrial User (SIU)--

- 1) All industrial users subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N and;
- 2) Any other industrial user that: discharges an average of 25,000 gallons per day or more of process wastewater to the POTW (excluding sanitary, noncontact cooling, and boiler blow-down wastewater); contributes a process wastestream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the Control Authority* on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement (in accordance with 40 CFR 403.8(f)(6)).

Upon finding that the industrial user meeting the criteria in paragraph 2, above, has no reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement, the Control Authority* may at any time, on its own initiative or in response to a petition received from an industrial user or POTW, and in accordance with 40 CFR 403.8(f)(6), determine that such industrial user is not a significant industrial user.

*The term "Control Authority" refers to the Washington State Department of Ecology in the case of non-delegated POTWs or to the POTW in the case of delegated POTWs.

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, wetlands, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Coliform Bacteria—Coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. A microbiological test is used to detect and enumerate the total coliform group of bacteria in water samples.

Total Suspended Solids (TSS)--Total suspended solids are the particulate materials in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

Upset--An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

Water Quality-based Effluent Limit--A limit on the concentration or mass of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

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APPENDIX C--TECHNICAL CALCULATIONS

Several of the Excel® spreadsheet tools used to evaluate a discharger's ability to meet Washington State water quality standards can be found on the Department's homepage at (<http://www.ecy.wa.gov/programs/wq/wastewater/index.html>)

Permit Limit Calculation Summary										
	Acute Dil'n Factor	Chronic Dil'n Factor	Metal Criteria Translator	Metal Criteria Translator	Ambient Concentration	Water Quality Standard Acute	Water Quality Standard Chronic	Average Monthly Limit (AML)	Maximum Daily Limit (MDL)	Comments
PARAMETER			Acute	Chronic	ug/L	ug/L	ug/L	ug/L	ug/L	
CITY OF WALLA WALLA										
copper (chr hdns = 54)	1.01	1.12	0.996	0.996	2.40	9.52	6.70	6.60	9.63	
copper (act hdns = 58)	1.01	1.12	0.996	0.996	2.40	10.19	7.13	7.07	10.31	
zinc (chr hdns = 54)	1.01	1.12	0.996	0.996	5.15	67.90	62.00	47.16	68.80	
zinc (act hdns = 58)	1.01	1.12	0.996	0.996	5.15	72.14	65.87	50.11	73.10	
lead	1.01	1.12	0.466	0.466	0.131	35.49	1	3.45	5.04	
silver	1.01	1.12	0.850		0.0100	1.35	10000	1.10	1.60	
mercury	1.01	1.12	0.85		0.00230	2.10	0.01	0.01	0.02	
nh3	1.01	1.12			0.015	15.03	2.14	2.70	3.93	
Copper (revision)*	1.01	1.12	0.996	0.996	2.40	10.19	6.70	7.07	10.31	
Zinc (revision)*	1.01	1.12	0.996	0.996	5.15	72.14	62.00	50.11	73.10	

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	Waste Load Allocation (WLA) and Long Term Average (LTA) Calculations							Statistical variables for permit limit calculation				
PARAMETER	WLA Acute	WLA Chronic	LTA Acute	LTA Chronic	LTA Coeff. Var. (CV)	LTA Prob'y Basis	Limiting LTA	Coeff. Var. (CV)	AML Prob'y Basis	MDL Prob'y Basis	# of Samples per Month	
	<i>ug/L</i>	<i>ug/L</i>	<i>ug/L</i>	<i>ug/L</i>	<i>decimal</i>	<i>decimal</i>	<i>ug/L</i>	<i>decimal</i>	<i>decimal</i>	<i>decimal</i>	<i>n</i>	
CITY OF WALLA WALLA					0.60	0.99		0.60	0.95	0.99	4.00	1.00
copper (chr hdns = 54)					0.60	0.99		0.60	0.95	0.99	4.00	1.00
copper (act hdns = 58)	10	7.22	3.1	3.8	0.60	0.99	3.1	0.60	0.95	0.99	1.00	1.00
zinc (chr hdns = 54)	10	7.70	3.3	4.1	0.60	0.99	3.3	0.60	0.95	0.99	1.00	1.00
zinc (act hdns = 58)	69	68.82	22.0	36.3	0.60	0.99	22.0	0.60	0.95	0.99	1.00	1.00
lead	73	73.16	23.4	38.6	0.60	0.99	23.4	0.60	0.95	0.99	1.00	1.00
silver	36	1.43	11.5	0.8	0.60	0.99	0.8	0.60	0.95	0.99	1.00	0.47
mercury	1	11200	0.4	5907.3	0.60	0.99	0.4	0.60	0.95	0.99	1.00	0.85
nh3	2	0.01	0.7	0.0	0.60	0.99	0.0	0.60	0.95	0.99	1.00	1.00
	15	2.40	4.9	1.3	0.60	0.99	1.3	0.60	0.95	0.99	1.00	1.00
Copper (revision)*					0.60	0.99		0.60	0.95	0.99	1.00	1.00
Zinc (revision)*	10	7.22	3.3	3.8	0.60	0.99	3.3	0.60	0.95	0.99	1.00	1.00
	73	68.82	23.4	36.3	0.60	0.99	23.4	0.60	0.95	0.99	1.00	1.00
* Copper and zinc effluent limits were re-calculated using the revised Excell spreadsheet TSDCALC11												

APPENDIX D--RESPONSE TO COMMENTS

Comments Received from the City of Walla Walla by E-Mail, dated March 31, 2005

Thanks for the opportunity to review the permit for factual errors. Here is the list we came up with thus far;

Comment 1: On the cover letter, Paul Olson and William Slovensky work for OMI, not the City of Walla Walla

Response to comment 1: Change noted and corrected

Comment 2: On the cover letter, permit, and fact sheet, the address of the WWTP is 572 Hatch St., not 571.

Response to Comment 2: Change noted and corrected

Comment 3: In the tables on pages 31-33, the “reference letters” need to be superscripted and put into parenthesis

Response to comment 3: Change noted and corrected

Comment 4: On page 20, D.g., apparently a font change made the limits 400C and 1040F instead of forty degrees centigrade and 104 degrees Fahrenheit.

Response to Comment 4: Change noted and corrected

Comment 5: On page 4 of the fact sheet, under permit status, there should be a space inserted between 2004 and “and”

Response to Comment 5: Change noted and corrected

Comment 6: Table 1 (beginning on p4) has inconsistent values, sometimes the max is lower than the min.

Response to Comment 6: Change noted and corrected

Comment 7: Metals limits on p. 8 of the permit need to be updated to the values calculated in the fact sheet.

Response to Comment 7: Change noted and corrected

Comment 8: Also, I had a question regarding the reclaim water requirement, although it is not part of a fact correcting aspect. It requires a chlorine residual of .5 ppm leaving the plant, but we just installed a UV disinfectant system to avoid the need to chlorinate. I don’t know if this was an oversight, or whether we will need to take this requirement into consideration.

Response to Comment 8: The requirement for a chlorine residual in the distribution line for reclaimed water reuse is in the Water Reclamation and Reuse Standard. During the final design for reclaimed water (prior to December 2008), the City of Walla Walla may request a waiver of this requirement from the departments of Health and Ecology (Refer to Section 1, Article 9, Section 5 "Disinfection), item (c)). However the waiver may include a requirement to periodically test for Total Coliform in the distribution system prior to reuse, or prior to discharge to an open irrigation ditch or basin.

Comments Received from the City of Walla Walla, dated May 19, 2005

Comment 1: On the cover letter, permit, and fact sheet, the address of the WWTP is 572 Hatch St., not 571.

Response to Comment 1: Comment noted and changes to cover letter, permit, and fact sheet were made.

Comment 2: In the tables on pages 31-33, the “reference letters” or “notes” need to be superscripted and put into parenthesis. The table needs clarification.

Response to Comment 2: Comment noted and changes to the tables in the Reclaimed Water Section “R1 and R2”

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Comment 3: Page 20.D.g: Apparently a font change made the limits 400C and 1040F instead of forty degrees centigrade and 104 degrees Fahrenheit.

Response to Comment 3: The error is noted and was corrected.

Comment 4: Page 8: in footnote 1, please add ICP or other approved modern analytic method.

Response to Comment 4: Comment noted and suggested language was added to S1.A Metals Effluent Footnote 1 for copper and zinc testing methods.

Comment 5: Page 8: Blalock is correct spelling.

Response to Comment 5: Correct spelling noted and correction made.

Comment 6: Page 10: wastewater effluent should be sampled at the UV discharge channel, not clarifier effluent.

Response to Comment 6: Correction noted and sample location for CBOD5, BOD5, and TSS was changed to UV Basin Effluent.

Comment 7: Page 10 and page 7: chlorine residual is required to be reported in different units, one in mg/L and one in µg/L. These should be consistent.

Response to Comment 7: Comment noted and changes to permit to require that chlorine residual testing be recorded as µg/L due to effluent requirement shown in S1.A.

Comment 8: Page 10: pH is supposed to be pH, not PH.

Response to Comment 8: Comment noted and change made to pH.

Comment 9: Page 11: we perform a priority pollutant scan last fall, yet here it is required again within the first year. This requirement should be like the last permit. Can this be eliminated?

Response to Comment 9: All major NPDES permittees are required by EPA for all facilities over 1.0 MGD to submit with the permit application priority pollutant scan information. At a minimum, effluent testing data must be based on at least three priority pollutant scans and must be no more than four and one half years old. Ecology will be using the previous scan and the two required scan to fulfill this requirement for Walla Walla WWTP. The Department will delay the first priority pollutant scan for the third year after permit issuance and one with the permit application.

Comment 10: Page 28: the requirement to run an (expensive) acute and chronic toxicity test twice in the permit period. We ran this test in February 2004, with excellent results. Can we eliminate or reduce this testing protocol?

Response to Comment 10: The effluent from the Walla Walla WWTP does meet the requirements set forth in WAC 173-205-040 for determining the need for effluent characterization. This section of the Whole Effluent Toxicity regulation describes when the discharge from a facility is considered to have a risk for aquatic toxicity and to need an effluent characterization for acute and chronic whole effluent toxicity if the facility or discharge meets any of the criteria. Since the effluent from this facility meets the criteria for an acute and chronic whole effluent toxicity testing, the permit requires the on-going permit term testing. However, since no toxicity is shown, there is no permit limits established in this permit.

Comment 11: Page 32-33: the table indicates that sampling should be done at pump station #3. This should be changed to UV discharge channel. Also, change "Sample Pointa" in chart heading.

Response to Comment 11: This location was selected because the 1997 Water Reclamation and Reuse Standards describes that the effluent, prior to filtration and disinfection shall not exceed 30 mg/L BOD5 and TSS. These limits are based on an "oxidized wastewater" as defined in the reclaimed water standards. These standards will become effective for this facility on January 1, 2009. See Conditions "R" for Reclaimed Water requirements. The sampling at this point is to meet standard secondary effluent requirements and as an operational tool for the permittee to determine efficiency of the secondary treatment process prior to the filtration/disinfection process.

The change to the chart heading was changed to show that "Sample Point ^(a)" is the correct heading.

Comment 12: Page 33: the table “note” read: the requirement that turbidity be “continuously monitored “and” read and recorded every four hours,” the “and” probably should be “or.”

Response to Comment 12: The permit effluent limits for turbidity in the Water Reclamation and Reuse permit section require the average monthly (<2.0 NTU) and sample maximum (<5 NTU) be recorded and submitted daily on the DMRs. The reason behind the six daily recording of the turbidity is to observe daily changes that may provide the permittee and the department with trend information on the efficiency and anomalies in the treatment process.

Responses to the following four Comments (13,14, 15, and 18) refer to the same general topic and will be assumed to be one comment. See Response to Comment following Comment 18, below.

Comment 13: page 31/32: the continuation of the table from p. 31 on p. 32, “Reclaimed Water Limitations,” the restriction in “note” g, that a chlorine residual of 0.5 ppm shall be maintained is incorrect for our facility. According to the reference on p.31, *Washington State Water Reclamation and Reuse Standards, 1997, Section 5f*;

Review and approval of the design and installation of ultraviolet radiation, ozonation, mixed oxidant or other non-chlorine based disinfection systems shall be performed on a case-by-case basis. Design and operation requirements shall conform to recognized standards and engineering practices as defined by USEPA, Water Environment Federation, American Society of Civil Engineers, American Water Works Association and other recognized engineering references.

Comment 14: Our facility installed a more environmentally friendly and improved technology (UV) to our process which eliminated the requirement of the substantial amount of chlorine for disinfection.

Comment 15: Page 31 and 32: As pointed out in the fact sheet, there is a problem with high chlorine discharge from the facility. As our conversation on the phone with Jerry Anderson, city will request the waiver on the 0.5 mg/L chlorine residual.

Response to Comments 13, 14, and 15: After conference with the Department of Health staff regarding the 0.5 mg/L chlorine residual requirement in reclaimed water distribution systems with UV disinfection and open irrigation reuse. The department, with the Department of Health’s concurrence, will waive this requirement for the 0.5 mg/L chlorine residual in the reclaimed water distribution system. However, if additional reuse opportunities are proposed in the future and require distribution piping, the departments of Health and Ecology will reconsider the 0.5 mg/L chlorine residual waiver at that time.

Comment 16: Page 37: the reclaimed water distribution system is not under direct control of the permittee: We will have to implement new Service and Use Area Agreements with the irrigation districts, prior to sending them reclaimed water in spring 2009. Can we remove all references about the distribution system from the permit and say it will be covered under the Service and Use Agreement?

Response to Comment 16: The Permittee shall develop a reclaimed water Use Area Agreement when the use area is not under direct control of the permittee (see Condition R4.G) that includes requirements specified in the Use Area Requirements included in Section 1, Article 12 of the Water Reclamation and Reuse Standards, 1997.

Condition R4.F requirements apply when the use area is under direct control of the Permittee (such as, irrigation of local parks, play fields, etc.). These requirements are to be included in the Reclaimed Water Ordinance.

Comment 17: Page 38: the city will have to adopt a reclaimed water ordinance as outlined on this page in 1998.

Response to Comment 17: The Permittee shall adopt a reclaimed water ordinance that includes requirements specified in permit Special Condition R4.F and H and the Use Area Requirements included in Article 12 of Section 1 of the Water Reclamation and Reuse Standards, 1997. This requirement is for all uses of reclaimed water under direct control of the Permittee and within the city reclaimed water service area.

Comment 18: Page 39: the City will request the waiver on the 0.5 mg/L chlorine residual.

Response to Comment 18: See response to comments 13, 14, and 15 above regarding the distribution of reclaimed water to the irrigation districts. When the Permittee proposes new uses of the reclaimed water and the use area is under

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direct control of the Permittee, the conditions in Condition R5.B may apply. The Permittee may apply for a waiver of the 0.5 mg/L chlorine residual at that time.

Comment sent by email from City of Walla Walla on May 24, 2005: Some of the MDL values listed in Table 2 [of the Pretreatment section of permit] appear to be questionable as to attainability. Typical recent reporting Limits for heavy metals analyses that we have been able to get laboratories to provide are as follows, compared with the required MDL values from Table 2:

Parameter	Typical Recent RL values µg/l	Draft Permit Table 2 MDL µg/l
Arsenic	1.0	1.0
Cadmium	0.2	0.1
Chromium	1.0	1.0
Copper	1.0	1.0
Cyanide	10.0	5.0 (ML)
Lead	1.0	1.0
Mercury	0.1	0.05
Nickel	1.0	1.0
Selenium	2.0	2.0
Silver	0.2	0.2
Zinc	4.0	0.05

Response to Comment sent by email:

A comparison was made between the Draft Table 2 MDLs and proposed changes to MDLs with the draft Local Limits proposed (June 2004) and existing local certified labs testing methods. The pretreatment sampling method detection limits will be amended for cadmium (0.2 µg/l), cyanide (10.0 µg/l), mercury (0.1 µg/l), and zinc (4.0 µg/l).

After the Local Limits are adopted by the city and included in the city's final pretreatment ordinance, the permittee shall review Table 2 in accordance with permit Special condition S6.F(f)(3) ["the permittee must use EPA-approved analytical methods that achieve the method detection limits (MDLs) in Table 2, unless higher detection limits are approved by Water Quality Program at ERO. Requests for higher MDLs must be submitted in writing to the ERO Pretreatment Engineer"], and recommend appropriate changes to Table 2 MDLs.

Comments submitted by the Environmental Protection Agency, dated May 18, 2005

Comment 1: The fact sheet for this permit discusses the potential for chlorine, ammonia, copper, lead, mercury, silver, and zinc to exceed water quality standards but does not provide the reasonable potential analysis in Appendix C of the fact sheet as indicated in the discussion on page 12 of the fact sheet. Appendix C does contain the effluent limit calculations which appear to have been calculated for copper, zinc, silver, mercury and ammonia; however, the permit only contains effluent limits for copper, zinc and ammonia. This is very misleading and should be clarified in the response to comments.

Response to Comment 1: The reasonable potential sheet was inadvertently left out of the permit. These calculations are included below. The additional calculations for lead, silver, mercury, and NH₃ should have been deleted from the limits calculation sheets. See the above corrected limits calculation change above in Appendix C. The current permit requires the permittee to meet the Washington State Water Reclamation and Reuse standards by December 31, 2008. However, the permittee has made substantial changes to the treatment and operational processes and is currently producing effluent that has met the Class A Reclaimed Water limits for the past three years. These major changes has produced an effluent that more than meets effluent limits for lead, silver, mercury and ammonia.

FACT SHEET FOR NPDES PERMIT WA-002462-7

FACILITY NAME WALLA WALLA

WASTEWATER TREATMENT PLANT

REASONABLE POTENTIAL				State Water Quality Standard		Max concentration at edge of...		
	Metal Criteria Translator as decimal	Metal Criteria Translator as decimal	Ambient Concentration (metals as dissolved)	Acute	Chronic	Acute Mixing Zone	Chronic Mixing Zone	LIMIT REQ'D?
Parameter	Acute	Chronic	ug/L	ug/L	ug/L	ug/L	ug/L	
Arsenic			1.276	360.00	190.00	2.31	2.21	NO
Cadmium	0.943	0.943	0.13	2.05	0.65	0.51	0.48	NO
chromium (Tri)	0.316	0.860	4.12	351.25	107.46	3.907	9.930	NO
Copper	0.996	0.996	1.31	10.19	6.70	10.47	9.57	YES
Lead	0.466	0.466	0.13	35.52	1.28	0.45	0.42	NO
Nickel	0.998	0.997	7.77	892.77	93.33	25.22	23.48	NO
Silver	0.850		0.010	1.35	1000000	0.52	0.55	NO
Zinc	0.996	0.996	1.72	72.14	62.00	151.70	136.80	YES
Selenium			1.00	20.00	5.00	4.45	4.01	NO
Mercury	0.850		0.00230	2.10	0.012	0.0089	0.0095	NO

REASONABLE POTENTIAL CALCULATIONS											
	Effluent percentile value		Max effluent conc. measured (metals as total recoverable)	Coeff Variation		# of samples	Multiplier	Acute Dil'n Factor	Chronic Dil'n Factor		
		<i>Pn</i>	<i>ug/L</i>	<i>CV</i>	<i>s</i>	<i>n</i>				MEC	FP
Arsenic	0.95	0.83 8	1.93	0.29	0.28	17	1.21	1.01	1.12	2.32	
Cadmium	0.95	0.83 8	0.42	0.43	0.41	17	1.31	1.01	1.12	0.55	
chromium (Tri)	0.95	0.84 7	9.94	0.36	0.35	18	1.24	1.01	1.12	12.36	
Copper		0.47 3	4.10	0.60	0.55	4	2.59	1.01	1.12	10.60	28.01
Lead	0.95	0.47 3	0.38	0.60	0.55	4	2.59	1.01	1.12	0.97	13.84
Nickel	0.95	0.47 3	9.84	0.60	0.55	4	2.59	1.01	1.12	25.44	
Silver	0.95	0.47 3	0.24	0.60	0.55	4	2.59	1.01	1.12	0.62	4.85
Zinc	0.95	0.47 3	59.50	0.60	0.55	4	2.59	1.01	1.12	153.84	81.93
Selenium	0.95	0.76 2	2.68	0.60	0.55	11	1.68	1.01	1.12	4.49	
Mercury	0.95	0.47 3	0.0041	0.60	0.55	4	2.585	1.01	1.12	0.01	0.08

Comment 2: The fact sheet (page 10) indicates that there was a TMDL for ammonia that was approved by EPA in 1993. From the fact sheet discussions, it was unclear whether the ammonia limits in the draft permit are due to implementation of the wasteload allocation (WLA) for this facility in the TMDL or due to a reasonable potential analysis of this pollutant to exceed water quality standards. The permit should be implementing the WLA in the TMDL.

Response to Comment 2: The Ammonia TMDL was developed from the summer months, May through November, and concluded that the effluent WLA for ammonia was “zero.” That is why the permit was written to require the permittee to discharge the effluent to the irrigator during these months. The City, also, is required by a court order to continue to discharge the effluent from this facility to the irrigators up to a specific flow. The permit effluent ammonia requirement was established for the remaining months, December through April, when the permittee is discharging to Mill Creek. The original effluent limits were based on ammonia toxicity and the ability of the treatment plant to consistently achieve the limits for ammonia. The permittee was given a schedule in the previous permit to meet these limits. Since that time the limits for ammonia has been met and this limit was removed from the permit. The permit will still have a monitoring requirement for ammonia.

Comment 3: The fact sheet (page 10) indicates that there was a TMDL for chlorine residual that was submitted to EPA in 1992. The fact sheet fails to state that this TMDL was approved by EPA in 1997. Further, it is unclear from the fact sheet discussion whether the chlorine residual limits in the draft permit are due to implementation of the wasteload allocation (WLA) for this facility in the TMDL or due to a reasonable potential analysis of this pollutant to exceed water quality standards. The permit should be implementing the WLA in the TMDL.

Response to Comment 3: The chlorine residual TMDL was developed from the summer months, May through November, and concluded that the effluent WLA for ammonia was “zero.” That is why the permit was written to require the permittee to discharge the effluent to the irrigator during these months. The permit effluent chlorine residual requirement was established for the remaining months, December through April, when the permittee is discharging to Mill Creek. The original effluent limits were based on chlorine toxicity and the requirement to disinfect the effluent prior to discharging to the irrigators. The permittee was directed to dechlorinate the effluent prior to the irrigation system because during certain weather conditions the irrigators were allowing the effluent to discharge back into Mill Creek. Since that time the permittee has installed a UV disinfection system and the chlorine is only used as a back up system; therefore, the limits in the permit based on chlorine toxicity.

Comment 4: Although the fact sheet discusses revising the ammonia TMDL, it fails to acknowledge the TMDL being developed for PCBs, DDT, DDE, heptachlor epoxide, hexachlorobenzene, chlordane, and dieldrin in the lower Walla Walla River. The TMDL also addresses impairment for toxaphene in other areas of the subbasin, including Mill Creek, where the City of Walla Walla WWTP discharges. These impairments were discovered during the course of a study of the subbasin by Ecology in preparation for the TMDL. That study can be found at: <http://ecy.wa.gov/pubs/0403032.pdf>.

This TMDL is being lead by Donovan Gray at Ecology’s Eastern Regional Office in Spokane. Ecology is planning to release a public draft sometime in late May and will have a 30-day public comment period. At the end of the public comment period Ecology will write responses to comments received and perhaps edit the TMDL in response to these comments. Then they will send the final version of the TMDL to EPA for approval. EPA will have 30 days to approve it.

It is EPA’s understanding that this was an oversight by the permit writer and discussions between Jerry Anderson of Ecology and Helen Rueda of EPA indicates that there will be a reopener clause added to the final permit to address the implementation of the WLAs from the TMDL into this permit. The responses to comments should address how Ecology is planning to implement any WLAs from this TMDL into the permit for this facility.

Response to Comment 4: Reference below to permit reopener clause that will be inserted into the permit as Special Condition S1.D. The Department may also modify this permit as a result of new or amended state or federal regulations.

FACT SHEET FOR NPDES PERMIT WA-002462-7

FACILITY NAME WALLA WALLA

WASTEWATER TREATMENT PLANT

S1.D PERMIT REOPENER – WALLA WALLA RIVER WATERSHED TMDL STUDY

The department will complete the Walla Walla River Watershed Total Maximum Daily Load studies (TMDLs) and submit the document to the Environmental Protection Agency (EPA) for review and approval. After approval by EPA, the documents will be used by the department to develop a Detailed Implementation Plan (DIP). The guidance and schedules in the DIP will be used to develop language and waste load allocations (WLA) in an amended fact sheet and permit (NPDES Permit No. WA-002065-6). The Department will then reopen and modify the permit to include appropriate language and WLA for discharge to Mill Creek. The permit will be subject to normal factual and public review process prior to final issuance.

Comment 5: Mill Creek is also on the 303(d) list for pH and temperature and listing for dissolved oxygen and fecal coliform. These listings will be addressed by TMDLs scheduled in 2006 and 2007. Ecology may want to consider having the permittee monitor for temperature and dissolved oxygen in the effluent to provide data for these TMDLs.

Response to Comment 5: Comment well taken. The draft and final permit include monitoring the effluent for temperature and dissolved oxygen on a daily bases. This data will be available for the TMDLs when needed.